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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,915	07/24/2006	Karl Raymond Wittig	US040074US	8242

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EXAMINER	
NGO, CHUONG D	

ART UNIT	PAPER NUMBER
2193	

NOTIFICATION DATE	DELIVERY MODE
04/24/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No.	Applicant(s)	
	10/586,915	WITTIG ET AL.	
	Examiner	Art Unit	
	Chuong D. Ngo	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07/24/2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 July 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/24/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The drawings are objected to because all the box in the figures should be labeled with text describing their functions.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. Claims 2-6 and 11-20rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As claim 2, since claim 1 requires steps of determining factor and correcting, the recitation "not performing the steps of steps of determining factor and correcting" in claim 2, line 5, is indefinite as being contradict to those recitation in claim 1. Claims 3 also have the same problem.

As per claim 4, it is unclear whether "the step of identifying", line 1, refers to those of claim 2 or claim 3. Claim 5 also have the same problem.

As per claim 6, it is unclear whether "the step of substituting", line 1, refers to those of claim 2 or claim 3.

As per claim 11, lines 5-7, it is indefinite as to what substitutes the at least one component.

As per claim 12, it is indefinite as to what is examined for in a plurality of highest order bits. Claim 17 also has the same problem. Further, the claim is indefinite as being depend on itself.

As per claim 16, the recitation "implementing successive complex multiplications upon a current phasor", lines 3-4, is misdescriptive as if the components of a current phasor are multiplied together.

As per claim 17, it is unclear how the step of examining is related to the other steps in claim 16.

As per claim 19, "the step of examining", line 1, lacks a proper antecedent basis. Further, it is unclear as to what "a condition of equal absolute-valued components", is.

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-20 are clearly directed to method for computing complex sinusoids. In order for such a claimed invention that merely performs calculations and manipulations of data to be statutory, the claimed invention must not directed to a preemption of a calculation and/or manipulation data . That is the claimed invention must not cover every substantial practical application . See *Gottschalk v. Benson,* 409 U.S. 63, 70 (1972), and "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility", OG Notices: 22 November 2005. However, claims 1-20 appear to cover every substantial practical application of the claimed calculation and manipulations of data. The recitations of "systolic processor array", "a discrete logic device" and "an algorithm running on a computer" in claims 7,8 and 9, are no more than a digital computer in *Gottschalk v. Benson* , which fails to limit the invention to a practical application. Therefore, the claimed method appears to cover every substantial practical application, and thus is directed to a preemption of a computation, and thus is nonstatutory.

Further, for a claimed process to be patent-eligible under § 101, the process must (1) be tied to a particular machine or apparatus that impose meaningful limits on the claim's scope to impart patent-eligibility, or (2) transform a particular article into a different state or thing. (See *Diamondv. Diehr,* 450 U.S. 175, 184 (1981); *Parker* v. *Flook,* 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson,* 409 U.S. *63,* 70 (1972); *Cochrane* v. *Deener,* 94 U.S. 780,787-88 (1876)). However, it is clear from claims 1-20 that the method is not tied to a particular machine or

apparatus that imposes meaningful limits on the claim's scope. The recitations of a "computing element" in the claims "systolic processor array", "a discrete logic device" and "an algorithm running on a computer" in claims 7,8 and 9 are mere general device recitation. They do not draw to any a particular machine or apparatus that impose meaningful limits on the claim's scope. Further, the claimed method does not transform a subject matter such as an article or material to a different state or thing. Therefore, the method of claims 1-20 fails to meet the machine-or transform test, and thus is also directed to a nonstatutory process.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1,8,9,16 and 17 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Napolitano (6,981,011).

Napolitano discloses in figure 4 a method for generating complex sinusoids of a desired frequency comprising the steps of multiplying (450) a current phasor (s[n-1]) by a predetermined value (Delta phasor) once every sampling interval to create a next phasor (s[n]); determining (570,580) an error factor (δR,δI) for real and imaginary components of the next phasor which can also be viewed as examining a plurality of highest order bits of the next phaso ; and correcting (590) the real and imaginary components by removing the error factor as claimed.

8. Claims 7,10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Napolitano (6,981,011).

As per claim 7, it is noted that Napolitano does not specifically discloses the method implemented within a systolic processor. However, since the feature as disclosed in the specification is no more than a field of use, and be cause Napolitano suggest in col. 10, lines 9-23, that any device on which exists a finite state machine capable of implementing the method can be used; It would have been an obvious field of use to person of ordinary skill in the art to implement the method with a systolic processor.

As per claims 10 and 20, it is further noted that Napolitano does not specifically discloses that the sampling rate is at least twice the desired frequency. However, this feature is well known in the art, and would have obvious in order to prevent aliasing.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong D. Ngo whose telephone number is (571) 272-3731. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis, Jr. A. Bullock can be reached on (571) 272-3759. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chuong D Ngo/
Primary Examiner, Art Unit 2193

04/20/2009